

Centralizing Support

Technology for Israeli Students with Special Needs

In the United States, the federal government supports educational services, but what happens with technology integration when a country with a population the size of Massachusetts uses its centralized educational system to help students with special needs? Our goal in this article is to share information regarding Israel's educational technology structure and projects for individuals with special needs. We hope it will provide some ideas that may prove useful for those working with such individuals.

Background

The educational system in the State of Israel is centralized and under the authority of the Ministry of Education. Within the ministry, a separate Division of Special Education provides supervision, workshops, and teaching materials, and disseminates information on teaching methods to teachers

*By Joan Thormann
and Dina Loeb*

Subject: Special education

Grades: K–12 (Ages 5–18)

Technology: E-mail, Internet, assistive technology

Standards: NETS•S 3; NETS•T1,II;
(<http://www.iste.org/nets/>)



and other related professionals who are integrated into the school system as part of the special education team.

In the early 1990s, the Israeli government nominated a committee to evaluate the needs of the school system regarding technology and science education. The group, made up of scientists and technology experts from industry, the military, and school systems, established a project named "Tomorrow '98," which was the driving force behind the integration of technology in schools, and identified a few goals to be accomplished within five years. Among them were to provide science and technology education to every student in K–12 schools and to help every child in Israel become computer literate.

The committee focused first on supplying schools with comput-

ers and technical support, with the aim that every 10 students have access to a computer. They established programs for teacher training and designed new curriculum in computer literacy for students in regular classrooms.

When this program turned its attention to students with special needs, it started with a limited number of schools that had classes for such students. Each year additional schools were added. The Division of Special Education worked on conceptualizing how to integrate the use of technology for students with special needs and pursued three models of computer distribution to facilitate the use of the technology:

1. Have designated times to use computer labs.
2. Have access to computers that were in the classroom as the curriculum dictated their use.
3. Use computers in class and also spend additional time in the computer lab.

Today, 90% of students with special needs in the special schools have access to computers, which revolutionizes the way these children are communicating and learning. Students who could not write are using the computers to express themselves, some by creating small notes or cards. Students have also learned to use PowerPoint for organizing their ideas

and presenting information using text and visuals. They have learned how to conduct investigations by using online resources for research and data collection. Students have also learned how to communicate using e-mail and how to carry on meaningful virtual conversations.

Training and Dissemination

The Ministry of Education provides some training and also has contracts with private organizations to carry out technology training for special education teachers. To manage the training, the country is divided into regions, and each region is divided into clusters of 16 schools with one Ministry of Education coordinator who disseminates information about special education technology. Some schools are provided with focused schoolwide training on specific hardware or software the school has acquired. For example, if a child in the school needs a speech recognition system, a specialist is hired to train teachers working with this child on how to use the system. Workshops and inservice training may be provided in the cluster, region, or at times nationwide. The teaching method and the number of schools included in each training session depend on the need, subject, and budget.

According to a Ministry of Education spokesperson, the ministry also offers other training modes through print and non-print materials, including video, records, and other media. All teachers have access to a centralized special education library that includes books, teaching materials, and information about disabilities and technology.

The Division of Special Education established a Web site (in Hebrew) to provide samples of teaching materi-

als, rules, and regulations regarding special education and information on projects and new initiatives. (*Editor's note:* For a list of resources relating to this article, see page 36.) The site also contains special interest forums, which include opportunities to ask questions and interact with peers, parents, end users, and professionals. The Web site is used by teachers, professionals, and students who may be active participants in forums or silent users who are accessing the site for information. Currently, the Division of Special Education is adding a special section for assistive technology that will include information about new products, links to resources, and special interest forums concerning assistive technology.

Ministry of Education Implementation of Computers in the Classroom

Currently the main technology focus of the Ministry of Education for students with special needs is to engage students in developing computer literacy and research skills, using technology that is integrated in the curriculum. These skills include defining a problem and gathering, analyzing, synthesizing, and presenting information. During this process the students exercise their communication skills with different groups of people. According to a Ministry of Education spokesperson, there is evidence that support from the ministry is having a positive effect. She shared a number of school-based projects that have been implemented.

Example I: Seniors Sharing. A technology-supported project in social studies in a Tel Aviv school involved a group of students with emotional problems. E-mail was used to initiate and facilitate contact with people in a retirement home. The students asked

the elderly citizens about their lives in their countries of origin. Based on the information the students got from the seniors about their home countries and culture, the students searched the Web for additional relevant information. Using PowerPoint, the students wrote reports and gave presentations on the information from the Web and what the elderly citizens shared. The reports included the geography, history, and culture of the countries of origin.

The students and elders were forced to conduct a large part of their communication by e-mail because of schedule and program constraints of both groups. During the interview process, the students learned not only about the various countries from which the senior citizens immigrated, but the students also enhanced their communication skills. They also improved their understanding of the kind of questions that are appropriate to ask and social boundaries. This online communication broadened to face-to-face meetings that enriched both the students' and the elders' experiences.

Example II: Peer Mentoring. In a country where inclusion or the "least restrictive environment" is not a policy, a project carried out in Tel Aviv gave a class of sixth grade students with special needs the opportunity to gain computer literacy and communication skills. The project was carried out with eighth graders who served as mentors in a regular school setting using a combination of online and face-to-face meetings. Every week the special-needs students went to the eighth graders' school and worked together in the computer resource room. Each guest student had two host students as computer mentors. The guests were taught computer

skills such as word processing and drawing. With peer models, they learned computer, communication, and social skills. The hosts gained by learning about differences and similarities. In addition, their computer and communication skills were honed because to teach they had to learn the skills in depth and think through how to explain what they needed to teach in a clear manner.

Co-author Dina LoebI teaches occupational therapy students at Tel Aviv University. As part of a course that addresses rehabilitation technology, she asks students to generate information on assistive technology in six categories: ADL (Activity of Daily Living), communication, mobility, technology at home, school/work, and pleasure. After the information is reviewed by professionals, the students place it on a Web site called Assistive Technology Information Dissemination (ATID), where it is available to the general public. Teachers report that the ATID site's organization according to a functional model (technological solutions for writing, eating, and so on), not just according to a medical model based on disabilities (technology for the blind or hearing impaired), is very useful and helps them identify technologies they need for their students.

Private Projects

In addition to the Ministry of Education and the school systems' projects to support technology for students with special needs, other publicly and privately supported organizations address these issues. For example, according to their 2003 interim report, the Center for Educational Technology (CET) in Tel Aviv is committed to designing and developing educational materials for K-12 students.

In 2000, CET was awarded an eight-year grant to use technology to improve learning opportunities for students with special needs and their families. A portion of the grant supports the design of software for students with special needs at all levels. CET has developed secondary level, easily navigable digital textbooks to help students with visual impairments and learning disabilities.

CET has also instituted an Internet project that addresses socialization issues for teenagers with special needs through contact with peers. Computer adaptations to allow access to the computer are made based on the students' individual needs. Once access is established, two components of this project are implemented. One is Virtual Friendship, where a student with special needs is paired with a non-handicapped student. These pairs communicate about their interests, build a friendship, and then meet at the end of the year. The other part of this Internet-based program is Virtual Tutoring. Adult tutors are paired with adolescents with special needs who are integrated in the regular school setting. The tutors, whose role is to provide support to mainstreamed students as they learn and adapt to the regular school setting, are trained and supervised by experts throughout the process.

CET has numerous other projects, including sponsoring a Web site for parents of children with ADD and ADHD and virtual community sites developed for and with youth with visual and physical disabilities.

Conclusion

The Ministry of Education, as part of the effort to decrease the digital divide in Israel, is committed to expanding the use of computers for students with special needs. This commitment

manifests itself in activities generated and supported by the ministry as well as by foundations, private organizations, and individuals. The current goal is to have one computer for every student. The hope is that the productivity of these students will increase if they have a personal computer that can be used by the students at home and at school.

Every year sees additional projects being developed. Educators, therapists, families, and others continue to search for ways to share their experiences to advance knowledge in the field and move forward in an effective manner.

Resources

- Assistive Technology Information Dissemination (ATID): <http://www2.tau.ac.il/medicine/ot/atid>
- Center for Educational Technology (CET): <http://www.cet.ac.il>
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Joan Thormann, PhD, is co-editor of L&L's special needs column with Cindy Anderson on behalf of ISTE's Special Education Technology SIG. She also is a professor in the Division of Technology in Education at Lesley University in Cambridge, Massachusetts. Her teaching and research interests include online teaching and learning, technology and special education and adult learning.



Dina LoebI, EdD, is a professor in the Department of Occupational Therapy at the School of Health Professions in the Faculty of Medicine at Tel Aviv University, Israel. For the last 20 years Dr. LoebI's teaching and research work has been in the area of educational and rehabilitation technology as they apply to children with special needs.